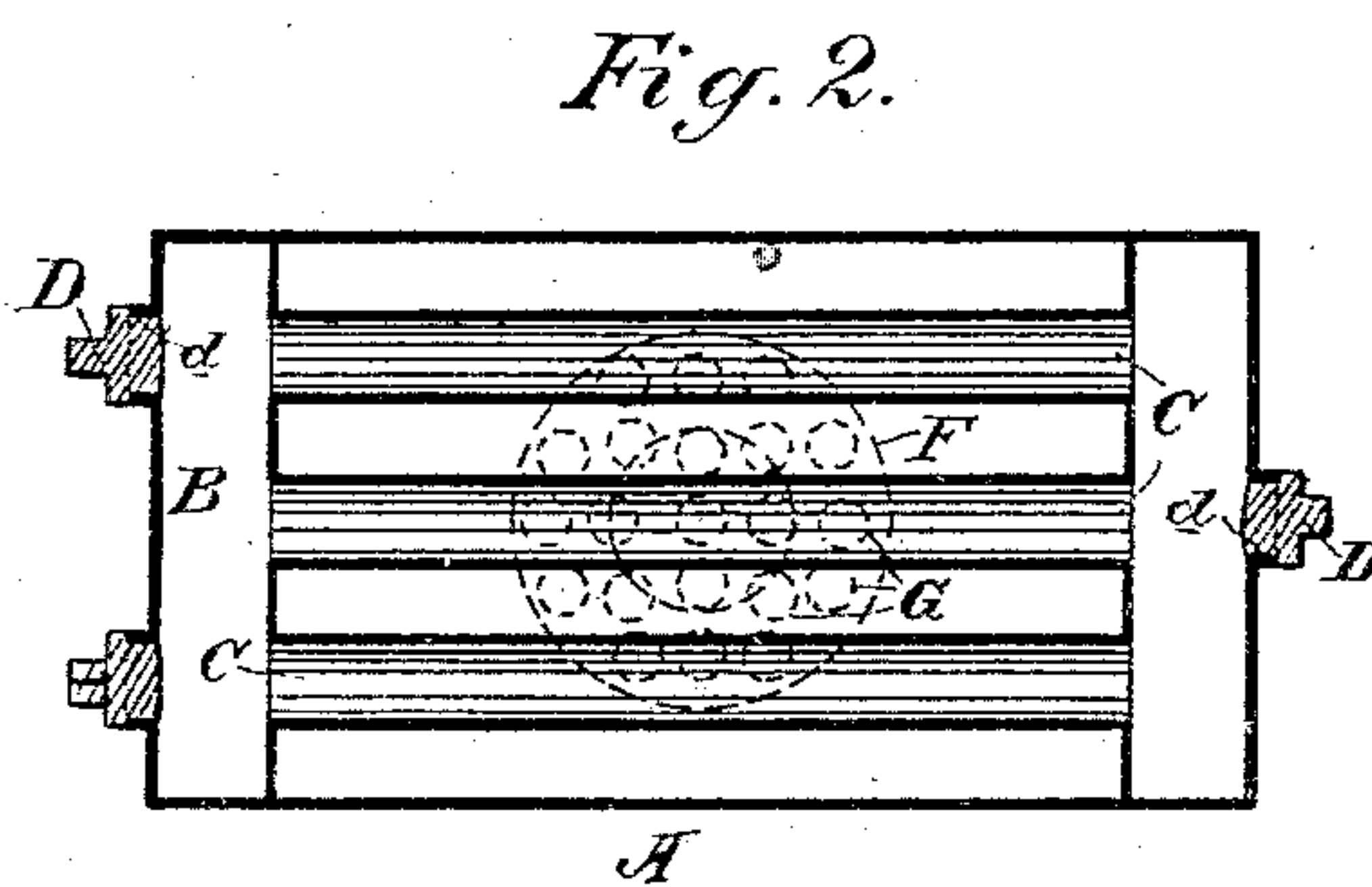
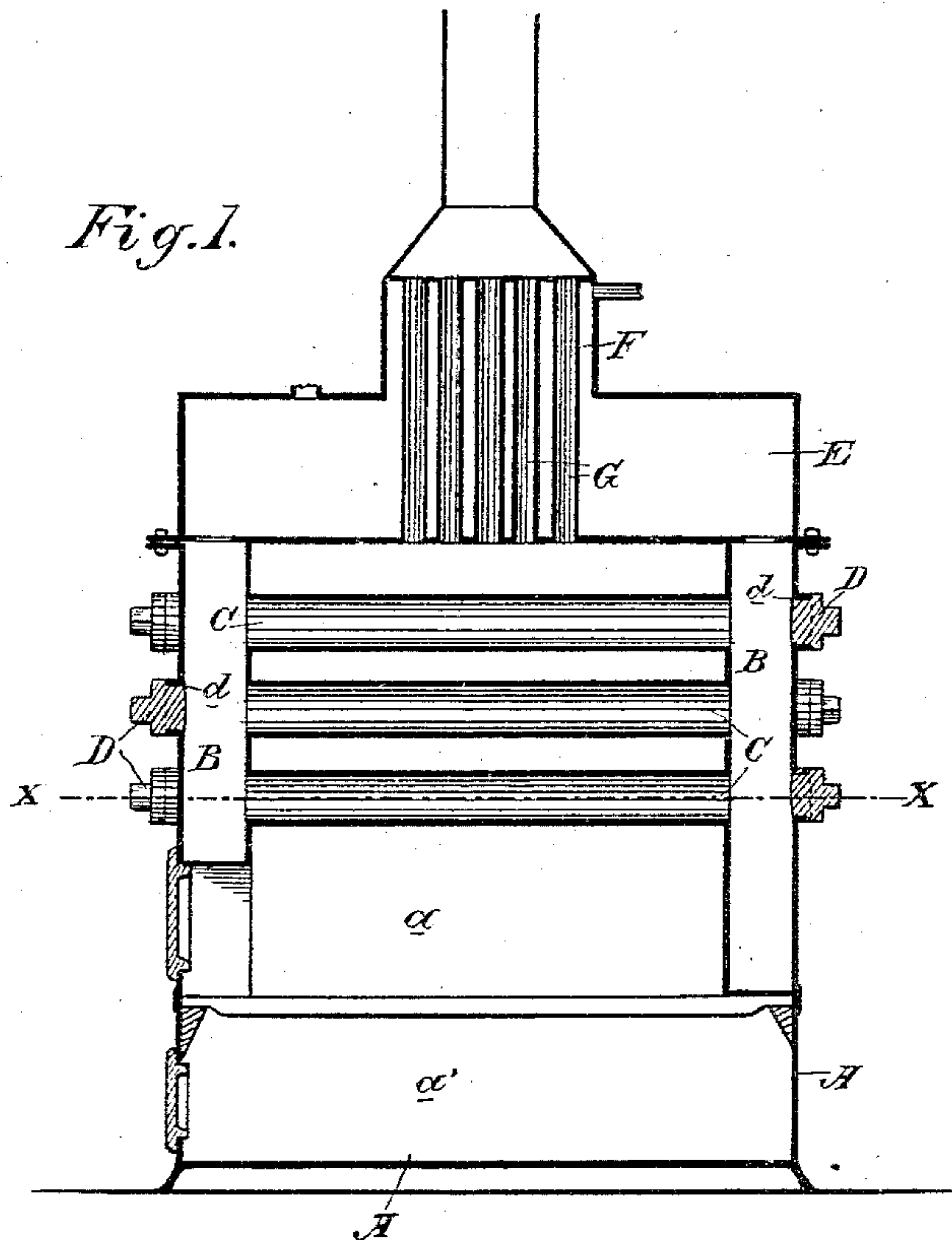


(No Model.)

H. C. HOLLOWAY.
STEAM GENERATOR.

No. 369,405.

Patented Sept. 6, 1887.



Witnesses,
Geo. B. Strong,
J. H. Nourse.

Inventor,
H. C. Holloway,
By Dewey & Co.
attys

UNITED STATES PATENT OFFICE.

HENRY CLAY HOLLOWAY, OF GILROY, CALIFORNIA.

STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 369,405, dated September 6, 1887.

Application filed April 30, 1887. Serial No. 236,724. (No model.)

To all whom it may concern:

Be it known that I, HENRY CLAY HOLLOWAY, of Gilroy, Santa Clara county, State of California, have invented an Improvement in Steam-Generators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of steam-generators; and my invention consists in the improved steam-generator which I shall hereinafter fully describe and claim.

The object of my invention is to provide a generator of simple construction, portable, so that it may be readily moved from place to place, and adapted to make steam rapidly.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section of my steam-generator. Fig. 2 is a horizontal section on line X X, Fig. 1.

A is a hollow casing or shell, having within it a fire box or chamber, *a*, under the grate of which is the usual ash-pit, *a'*.

B is a water jacket or space formed in the shell A, and C are water-tubes which connect the sides of the water jacket or space and pass through the fire box or chamber horizontally, as shown. Through the outside of the shell and opposite one end of each tube are made holes *d*, covered by screw-plugs D. There is but one of these holes and plugs for each tube, and these are arranged on opposite sides of the shell, and are in communication with alternate water-tubes—that is to say, a hole on one side is in communication with one end of a water-tube—but there is no hole communicating with its other end; but on the other side of the shell, and in communication with the adjacent tube, is a hole, there being no hole in the first side of the shell for connecting with the other end of said adjacent tube. The object of these holes is to enable the water-tubes to be readily cleaned out, and the advantage of arranging them on each side of the shell and in connection with the alternate tubes is to avoid crowding them on one side.

E is a casting forming the water-box. This

is bolted to the top of the shell A, so that its water-space at each end communicates with the water jacket or space B of said shell.

The box is provided with a steam-dome, F, on the top, as shown.

G are fire-tubes which open out below into the fire-box *a*, and extend upwardly through the water-box and through the steam-dome.

It will thus be seen that in this single device I have provided for a combination of water-tubes and fire-tubes, thus obtaining the advantages of both systems and exposing a large surface of water to the action of the flames, which heat not only the water in the horizontal water-tubes which traverse the fire-chamber, but also the water in the box above, in which the steam is formed.

With this generator steam may be made rapidly and in sufficient quantities, and the whole device is portable and may be made of castings in separate pieces which are bolted together properly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a steam-generator, a casing or shell provided with a fire box or chamber and a water jacket or space, water-tubes connecting the sides of said water jacket or space and passing through the fire chamber or box, and plug-controlled cleaning-holes through the outer wall of the shell, and in connection with opposite ends of alternate tubes, in combination with a water box or compartment mounted on top of the shell or casing and in communication with its water jacket or space, a steam-dome above said water-box and in communication therewith, and fire-tubes in communication with the fire-chamber of the shell and passing through the water-box and the steam-dome, substantially as herein described.

In witness whereof I have hereunto set my hand.

HENRY CLAY HOLLOWAY.

Witnesses:

WM. I. ALEXANDER,
GEO. E. HERSEY.